JS 1/19/22
RJA 2/16/22

Ecotox Report for Case # P-18-0007

General

[redacted]

Report Status: Complete
Status Date: 11/26/2018
CRSS Date: 10/12/2017
SAT Date: 10/13/2017
SAT Chair: Legacy Placeholder
Consolidated PMN: Y
Consolidated Set: P-18-0008
Ecotox Related Cases:
Health Related Cases:
Submitter: Nexoleum USA Corp
CAS Number: 2097734-14-8
Chemical Name: Glycerides, soya mono- and di-, epoxidized, acetates
Use: Plasticizer and stabilizer for flexible polyvinyl chloride (PVC) plastic.The substance is manufactured with epoxidized soybean oil (CASRN 8013-07-8, on TSCA) and epoxidized soya fatty acid methyl esters (CASRN 68082-35-9, on TSCA). Consolidated Set [redacted]. [redacted] P2REC: CRSS: forward. P2 Claims: The substance will be biodegradable, be a replacement for phthalate ester plasticizers, and have lower mammalian toxicity compared to the former.
Trade Name: Nexo
PV-max(kg/yr): [redacted]
Ecotox Assessor: Kennedy, Amuel

Fate Summary Statement

Fate Summary Statement: P-18-0007-08

FATE: Estimations for typical and low weight, MW = 471, C25H42O8

Liquid with MP < 25 °C (E)
log Kow = 5.19 (E)
S = 0.81
mg/L at 25 °C (E)
VP < 1.0E-6 torr at 25 °C (E)
BP > 400 °C

(E)
H < 1.00E-8 (E)
log Koc = 4.54 (E)
log Fish BCF = 1.72
(52) (E)
log Fish BAF = 1.09 (12) (E)
POTW removal (%) = 90 via
sorption and biodeg
Time for complete ultimate aerobic biodeg = wk

Sorption to soils/sediments = moderate
PBT Potential: P3B1

*CEB FATE: Migration to ground water = moderate
Bioconcentration
factor to be put into E-FAST: 12

PMN Material:
Overall
wastewater treatment removal is 90% based on sorption and biodegradation.

Sorption to sludge is moderate to strong based on the estimated physical-chemical properties from EPISUITE.
Air Stripping
(Volatilization to air) is negligible based on the estimated physical-chemical properties from EPISUITE.
Removal by
biodegradation in wastewater treatment is high based on BIOWIN model estimates and analogous chemicals.
The aerobic aquatic
biodegradation half-life is weeks based on BIOWIN model estimates and analogous chemicals.
The anaerobic aquatic biodegradation half-life
is greater than months based on the aerobic biodegradation half-life. The anaerobic biodegradation half-life is projected to be greater or equal to the aerobic biodegradation half-life.

Sorption to soil and sediment is moderate based on the estimated physical-chemical properties from EPISUITE.
Migration to groundwater
is moderate based on the estimated physical-chemical properties from EPISUITE.
PMN Material:
High Persistence (P3) is based on the
anaerobic biodegradation half-life.
Low Bioaccumulation potential

(B1) is based on BCFBAF model estimates.

Bioaconcentration/Bioaccumulation factor to be put into E-Fast:
12

Physical Chemical Information

Molecular Weight:	470.81		
Wt% < 500:		**Wt% < 1000:**	
Physical State - Neat:	Liquid		
Melting Point:		**Melting Point (est):**	
MP (EPI):			
Vapor Pressure:		**Vapor Pressure (est):**	<0.000001
VP (EPI):			
Water Solubility:		**Water Solubility (est):**	0.00081
Water Solubility (EPI):			
Henry's Law::			
Log Koc:		**Log Koc (EPI):**	
Log Kow:		**Log Kow (EPI):**	
Log Kow Comment:			

SAT Concern Level

Ecotox Rating (1):	1
Ecotox Rating Comment (1):	
Ecotox Rating (2):	
Ecotox Rating Comment (2):	
Ecotox Route of Exposure:	No releases to water

Ecotox Comments

Exposure Based Review (Eco):	Y
Ecotox Comments:	
Exposure Based Testing:	

PBT Ratings

Persistence	Bioaccumulation	Toxicity	Comments
3	1	1	

Eco-Toxicity Comment:

Fate Ratings

Removal in WWT/POTW (Overall):	90					
Condition	**Rating Values**	**Rating Description**				**Comment**
		1	**2**	**3**	**4**	
Fish BCF:						
Log Fish BCF:						
WWT/POTW Sorption:	2-3	Low	Moderate	Strong	V. Strong	
WWT/POTW Stripping:	4	Extensive	Moderate	Low	Negligible	
Biodegradation Removal:	2	Unknown	High	Moderate	Negligible	
Biodegradation Destruction:		Unknown	Complete	Partial	—	
Aerobic Biodeg Ult:	2	<= Days	Weeks	Months	> Months	
Aerobic Biodeg Prim:		<= Days	Weeks	Months	> Months	
Anaerobic Biodeg Ult:	4	<= Days	Weeks	Months	> Months	
Anaerobic Biodeg Prim:		<= Days	Weeks	Months	> Months	
Hydrolysis (t1/2 at pH 7,25C) A:		<= Minutes	Hours	Days	>= Months	

Removal in WWT/POTW (Overall):	90					
Condition	**Rating Values**	**Rating Description** **1**	**2**	**3**	**4**	**Comment**
Hydrolysis (t1/2 at pH 7,25C) B:		<= Minutes	Hours	Days	>= Months	
Sorption to Soils/Sediments:	3	V. Strong	Strong	Moderate	Low	
Migration to Ground Water:	3	Negligible	Slow	Moderate	Rapid	
Photolysis A, Direct:		Negligible	Slow	Moderate	Rapid	
Photolysis B, Indirect:		Negligible	Slow	Moderate	Rapid	
Atmospheric Ox A, OH:		Negligible	Slow	Moderate	Rapid	
Atmospheric Ox B, O3:		Negligible	Slow	Moderate	Rapid	
Bio Comments:						

Fate Comments: Analog (CAS 68082-35-9): OECD 301D(Closed Btl): 69.77%/28d.
PMN Material:
Overall wastewater treatment removal is 90% based on sorption and biodegradation.
Sorption to sludge is moderate to strong based on the estimated physical-chemical properties from EPISUITE.
Air Stripping (Volatilization to air) is negligible based on the estimated physical-chemical properties from EPISUITE.

Removal by biodegradation in wastewater treatment is high based on BIOWIN model estimates and analogous chemicals.
The aerobic aquatic biodegradation half-life is weeks based on BIOWIN model estimates and analogous chemicals.
The anaerobic aquatic biodegradation half-life is greater than months based on the aerobic biodegradation half-life. The anaerobic biodegradation half-life is projected to be greater or equal to the aerobic biodegradation half-life.

Sorption to soil and sediment is moderate based on the estimated physical-chemical properties from EPISUITE.
Migration to groundwater

Removal in WWT/POTW (Overall):	90				
Condition	**Rating Values**	**Rating Description** 1	2	3	4	**Comment**
	is moderate based on the estimated physical-chemical properties from EPISUITE. PMN Material: High Persistence (P3) is based on the anaerobic biodegradation half-life. Low Bioaccumulation potential (B1) is based on BCFBAF model estimates. Bioaconcentration/Bioaccumulation factor to be put into E-Fast: 12				

Ecotoxicity Values

Test organism	Test Type	Test Endpoint	Predicted	Experimental	Comments
Fish	96-h	LC50	*		* = no effects at saturation; Analog ECHA Dossier for CASRNs 68082-35-9, 68082-34-8, 61789-01-3, and 68082-35-9
Daphnid	48-h	LC50	*		* = no effects at saturation; Analog ECHA Dossier for CASRNs 68082-35-9, 68082-34-8, 61789-01-3, and 68082-35-9
Green Algae	96-h	EC50	*		* = no effects at saturation; Analog ECHA Dossier for CASRNs 68082-35-9, 68082-34-8, 61789-01-3, and 68082-35-9
Fish	-	Chronic Value	*		* = no effects at saturation; Based on analogs [redacted]

Test organism	Test Type	Test Endpoint	Predicted	Experimental	Comments
Daphnid	-	Chronic Value	*		* = no effects at saturation; Based on analogs [redacted]
Green Algae	-	Chronic Value	*		* = no effects at saturation; Based on analogs [redacted]

Ecotox Value Comments: EPA estimated environmental hazard of this new chemical substance using hazard data on analogous chemicals (CASRNs 68082-35-9, 68082-34-8, 61789-01-3, and 68082-35-9; [redacted] MW 471; Log Kow = 5.19 (P, mono-fatty acid glyceride), 13.58 (P, di-fatty acid glyceride); liquid with an unknown MP (P); S = 0.81 mg/L (P, mono-fatty acid glyceride), 2.6E-9 mg/L (P, di-fatty acid glyceride) ; effective concentrations based on 100% active ingredients and mean measured concentrations; hardness <150 mg/L as CaCO3; and TOC <2.0 mg/L.

Ecotox Factors

Factors	Most Sensitive Endpoint	Assessment Factor	CoC	Comment
Acute Aquatic (ppb):				Because hazards are not expected up to the water solubility limit, acute and chronic concentrations of concern are not identified.
Chronic Aquatic (ppb):				Because hazards are not expected up to the water solubility limit, acute and chronic concentrations of concern are not identified.

Factors	Values	Comments
SARs:	Polyepoxides and Esters	

Factors	Values	Comments
SAR Class:	Polyepoxide, Esters	
TSCA NCC Category?	Epoxides Esters	

Recommended Testing:

Ecotox Factors Environmental

Comments: Hazard: Environmental hazard is relevant to whether a new chemical substance is likely to present unreasonable risk because the significance of the risk is dependent upon both the hazard (or toxicity) of the chemical substance and the extent of exposure to the substance. EPA estimated environmental hazard of this new chemical substance using hazard data on analogous chemicals (CASRNs 68082-35-9, 68082-34-8, 61789-01-3,
and 68082-35-9; [redacted]. Acute and chronic toxicity values estimated for fish, aquatic invertebrates, and algae are all no effects at saturation. These toxicity values indicate that the new chemical substance is expected to have a low environmental hazard. Because
hazards are not expected up to the water solubility limit, acute and chronic concentrations of concern are not identified.

Environmental
Risk: Risks to the environment from acute and chronic exposure are not expected at any concentration of the new chemical substance soluble in the water (i.e., no effects at saturation).

Comments/Telephone Log

Artifact	Update/Upload Time
[redacted]	[redacted]

Artifact	Update/Upload Time
[redacted]	[redacted]